

24.7900

36092  
S/181/62/004/004/037/042  
B102/B104

AUTHORS: Meng Hsien-chen, Starobinets, S. S., and Gurevich, A. G.

TITLE: The effect of impurities on the anisotropic width of the resonance curve in ferrites

PERIODICAL: Fizika tverdogo tela, v 4, no. 4, 1962, 1060-1062

TEXT: Yttrium garnet ferrites show a low-temperature maximum of the ferromagnetic-resonance line width  $2\Delta H$  when impurified with certain rare-earth ions. In spinel-type ferrites the low-temperature maximum of  $\Delta H$  is attributed to the effect of  $Fe^{2+}$  ions (R. L. White, Phys. Rev. Lett. 2, 465, 1959). It is studied to what extent the highly anisotropic shape of the resonance curve can be due to these impurities. The anisotropy of the relaxation mechanism of  $Fe^{2+}$  and rare-earth ions was investigated with the ferrite  $Mg_{0.525}Mn_{0.665}Fe_{1.81}O_4$  and yttrium garnets containing varying amounts of rare-earth impurities. The samples were prepared as carefully polished spherical single crystals. The temperature and angular dependences of  $\Delta H$  were measured in the 3-cm range; the anisotropy of  $\Delta H$

Card 1/2

The effect of impurities on the ...

S/181/62/004/004/037/042  
B102/B104

had the normal sign, the same as the phenomenological anisotropy:  
 $(\Delta H)_{[111]} > (\Delta H)_{[100]}$ . For impurified ferrites it is, however, greater than  
 that caused by the phenomenological effect. At room temperature  
 $(2\Delta H)_{[111]} = 0.50$  oe, and  $(2\Delta H)_{[100]} = 0.43$  oe. Anisotropy increases with  
 increasing impurity content, especially at low (liquid nitrogen)  
 temperatures.  $(2\Delta H)_{[111]} - (2\Delta H)_{[100]}$  increases but the depth of  
 anisotropy is reduced and the nature of the angular dependence of  $\Delta H$   
 varies. The minimum of  $\Delta H$  is found in a direction different from the  
 symmetry axes. No anomaly of the anisotropy of  $H_{res}$  was observed. In the  
 Mn-Mg ferrite the anisotropy is of the same order and due to the  $Fe^{2+}$  ions.  
 There are 2 figures.

ASSOCIATION: Institut poluprovodnikov AN SSSR Leningrad (Institute of  
 Semiconductors AS USSR, Leningrad)

SUBMITTED: January 5, 1962

Card 2/2

33415

S/032/62/028/002/016/037

B104/B108

9,2571 (1147, 1163)

AUTHORS: Gurevich, A. G., Golovenchits, Ye. I., Starobinets, S. S.,  
and Safant'yevskiy, A. P.

TITLE: Measurement of superhigh frequency ferrite parameters

PERIODICAL: Zavodskaya laboratoriya, v. 28, no. 2, 1962, 189 - 196

TEXT: The authors first describe two devices for measuring the ferromagnetic resonances in single and polycrystals. The experimental arrangement shown in Fig. 1 is used for ferrites with a narrow resonance curve. The 51-M (51-I) generator (8700-9500 Mcps) produces the high-frequency signals. The ferrite valve 2 prevents coupling between generator and measuring part. The ferrite valve 3 prevents a possible effect of the detector 4 on the resonance curve. Resonator 5 is a waveguide with rectangular cross section (23.10 mm) in which  $TE_{10n}$  oscillations ( $n = 4-6$ ) are excited. In order to achieve the necessary high stability of the magnetic field the authors used the magnet 6 produced at the Laboratoriya postoyannykh magnitov NIITVCh (Laboratory for Permanent Magnets of the

Card 1/62

Measurement of superhigh ...

33415

S/032/62/C28/C02/C16/C37  
B104/B108

Ni1PVCh) with which the field could be varied in the range between 1000 and 5000 oe. With this device the dependence of the transmission coefficient on the constant magnetic field was determined. The arrangement shown in Fig. 3 was used to measure the ferromagnetic resonance of ferrites with wide resonance curve. To increase sensitivity a reflecting resonator was built into one of the branches of the waveguide bridge. The magnetic field can be varied in the range from 0 to 4000 oe. The authors discuss three circuits for measuring the components of the magnetic susceptibility tensor and the dielectric constant of ferrites. 3 cm, 10 cm, and 50 cm oscillations were produced in resonators (Fig. 4) by klystron generators. The resonator signal is amplified and fed into the vertical amplifier of an EO-7 (EO-7) oscilloscope. A. G. Gurevich and I. Ye. Gubler (report at the 3-ye Vsesoyuznoye soveshchaniye po ferritam (Third All-Union Conference on Ferrites), Izd. AS BSSR, Minsk (1959)) are mentioned. There are 6 figures, 1 table, and 4 Soviet references.

ASSOCIATION: Institut poluprovodnikov Akademii nauk SSSR (Institute of Semiconductors of the Academy of Sciences USSR)

Card 2/6<sub>2</sub>

S/120/63/000/001/015/072  
E039/E420

AUTHORS: Gurevich, A.G., Starobinets, S.S., Men Hsiang-Chen,  
Safant'yevskiy, A.P., Shtreys, Ya.I., Shekalov, A.A.

TITLE: Apparatus for investigating ferromagnetic resonance

PERIODICAL: Priory i tekhnika eksperimenta, no.1, 1963, 73-77

TEXT: An apparatus for determining ferromagnetic resonance (FMR) in ferrites with narrow resonance curves in the 3 cm region and for a temperature range from -190 to +400°C is described. The sample is spherical (0.3 to 0.8 mm diameter) and is located in a rectangular resonator with a type TE<sub>106</sub> (Tye<sub>106</sub>) oscillator. The magnetic field is provided by means of a permanent magnet with a shunt and modulating coils which enables a high accuracy to be obtained using a recorder. Temperature control of the sample is achieved by blowing either a hot or cold jet of gas over it. This apparatus permits the investigation of FMR curves with widths less than 0.5 Oe and up to about 50 Oe. The range can be increased by increasing the number of turns on the coil of the magnet system. Lower temperatures can be achieved either by pumping nitrogen or, for a much lower temperature, by using Card 1/2

Apparatus for investigating ...

S/120/63/000/001/015/072  
E039/E420

hydrogen or helium. Higher temperatures can be achieved by using more heat-resisting material. There are 5 figures.

ASSOCIATION: Institut poluprovodnikov AN SSSR  
(Institute of Semiconductors AS USSR)

SUBMITTED: December 1, 1961

Card 2/2

S/181/63/005/003/007/046  
B102/B180

AUTHORS: Gurevich, A. G., Meng Hsien-cheng, and Starobinets, S. S.

TITLE: Anisotropy of the width of the resonance curve of yttrium garnet with rare-earth impurities

PERIODICAL: Fizika tverdogo tela, v. 5, no. 3, 1963, 740-749

TEXT: High-purity yttrium garnet samples (99.999%) were doped with rare-earth ions ( $\text{Dy}^{3+}$  0.008-0.3 mole%; or  $\text{Tb}^{3+}$  0.01; or  $\text{Ho}^{3+}$  0.1; or  $\text{Sm}^{3+}$  0.1), ground to spherical shape and given definite orientation in a magnetic field;  $2\Delta H$  the widths of the resonance curves were measured at 293, 90 and  $78^\circ\text{K}$  in the 3-cm band in a rectangular  $\text{TE}_{106}$  resonator.

The experimental method is described in PTE no. 1, 78, 1963. Results:  $2\Delta H$  due to the rare-earth impurities considerably exceed those that follow from Kittel's theory (Phys. Rev. 115, 1587, 1959) and are not proportional to the magnetic moments of the impurity ions, as would follow from this theory. At  $T \geq 78^\circ\text{K}$ , the  $2\Delta H = f(\cdot)$  curves have minima  
Card 1/2

Anisotropy of the width of the ...

S/181/63/005/003/007/046  
B102/B180

at those angles at which the resonance field would have maxima at helium temperatures. This agrees quite well with current theories of resonance field anisotropy (Phys. Rev. 124, 1401, 1961) and resonance curve width (Phys. Rev. 116, 323, 1959). It is suggested to obtain information on the impurity levels and structural peculiarities from detailed studies of the resonance field anomalies and the anomalies of the angular spectra of  $2\Delta H$ . There are 8 figures and 1 table.

ASSOCIATION: Institut poluprovodnikov AN SSSR, Leningrad  
(Institute of Semiconductors AS USSR, Leningrad)

SUBMITTED: September 21, 1962

Card 2/2



L 18115-63

EWP(q)/EWT(m)/BDS AFFTC/ASD JD/JG

ACCESSION NR: AP3003908

S/0181/63/005/007/2019/2021

AUTHORS: Gurevich, A. G.; Solov'yev, V. I.

TITLE: Fine structure of angular dependence on width of resonance curve for yttrium garnet with terbium impurities

SOURCE: Fizika tverdogo tela, v. 5, no. 7, 1963, 2019-2021

TOPIC TAGS: fine structure, resonance curve, garnet, Y, Tb, rare earth, energy level, resonance field, impurity ion, exchange field, anisotropy, crystal, ferromagnetic resonance

ABSTRACT: The authors have investigated crystals of yttrium garnet with 0.01% Tb (molar percent relative to Y content) from the same collection used in the work of A. G. Gurevich, Meng Hsien-chen, and S. S. Starobinets (FTT, 5, 740, 1963). The samples were prepared in the form of small spheres about 0.5 mm in diameter, polished with an abrasive powder having a grain size of  $1\mu$ . Measurements were made on a 3.5-cm wave at 4.2K. The angular dependence investigated was for the angle in the (110) plane between the direction of magnetic field and the  $[100]$  axis (measured with a precision of  $\sim 0.3^\circ$ ). Maximums for the resonance field

Card 1/2

L 18115-63

ACCESSION NR: AP3003908

2

were found at angles of 19, 36, and 79°, agreeing with the results of J. F. Dillon and L. R. Walker (Phys. Rev., 124, 1401, 1961). Maximums of fine structure were found at several angles: 72, 77, and 81° in the 70-85° absorption band. These may be related to the three energy levels of the Tb<sup>3+</sup> ion. Correlation for other absorption bands is not as good. The authors note that during the experimental study of ferromagnetic resonance in single crystals containing rare-earth impurities and other "fast-relaxation" ions, it was necessary to focus more attention on anisotropy in the width of the resonance curve. A very urgent problem is the development of a theory on the width of resonance curves corresponding to fast-relaxation impurities, a theory that will permit the use of experimental data on anisotropy for determining the pattern of energy levels for impurity ions in crystals and exchange fields. "The authors express their thanks to A. I. Yakovlev for his aid in making the measurements." Orig. art. has: 1 figure.

ASSOCIATION: Institut poluprovodnikov AN SSSR, Leningrad (Institute of Semiconductors, Academy of Sciences, SSSR)

SUBMITTED: 08Mar63

DATE ACQ: 15Aug63

ENCL: 00

SUB CODE: PH

NO REF SOV: 003

OTHER: 003

Card 2/2

GUREVICH, A.G.; STAROBINETS, S.S.; MEN' SYAN-CHZHEN'; SAFANT'YEVSKIY, A.P.;  
SHTREYS, Ya.I.; SHEKALOV, A.A.

Apparatus for studying ferromagnetic resonance. Prib. i tekhn.  
eksp. 8 no.1:73-77 Ja-F '63. (MIRA 16:5)

1. Institut poluprovodnikov AN SSSR.  
(Ferromagnetic resonance)

EWT(1)/BDS/EED-2--AFFTG/ASD

L 10797-63

ACCESSION NR: AP3000559

S/0109/63/008/005/0780/0790

AUTHOR: Gurevich, A. G.

TITLE: Ferrite ellipsoid in a waveguide

SOURCE: Radiotekhnika i elektronika, v. 8, no. 5, 1963, 780-790

TOPIC TAGS: waveguide, ferrite ellipsoid, oscillatory system, unloaded Q-factor, ferrite parameter

ABSTRACT: The development of a method for calculating the reflection and transmission factors of a waveguide with an inserted magnetized ferrite ellipsoid is reported. The ellipsoid is considered an oscillatory system interacting with the self-consistent field of a waveguide. Under the assumption of a uniform type of precession and small ferrite dimensions, expressions for reflection and transmission factors were found in terms of the unloaded Q-factor and the Q of the coupling between the ferrite and the waveguide ( $Q_c$ ). These parameters were determined for the ferrite in an infinite, a short-circuited, and a crossed waveguide under the following assumptions: 1) the effect of propagation of electromagnetic waves in the ferrite was disregarded; and 2) the near fields in the waveguide were considered to be

Card 1/2

L 10797-63

ACCESSION NR: AP3000559

3

negligible. From experimental results, the first assumption appears to be in good agreement with the experiment if the dimensions of the ferrite do not exceed 0.1 wavelength. The second assumption leads to a certain decrease of the experimental value (1.2—1.5 times) of  $(Q_c)$  in respect to its theoretical value. The method developed is applicable to the design of waveguide systems with small ferrites and for the measurement of ferrite parameters. "The author expresses thanks to S. S. Starobints and A. P. Safent'yevskiy for a discussion of problems connected with the work and V. A. Sanina for assistance in conducting the experiments." Orig. art. has: 4 figures and 45 formulas.

ASSOCIATION: none

SUBMITTED: 20Apr62

DATE ACQ: 30May63

ENCL: 00

SUB CODE: SD

NO REF SOV: 008

OTHER: 005

Card *mes/CS*  
2/2

GUREVICH, A. G.; STAROFINETS, S. S.

"Parametric excitation of spin waves with magnetic and elastic pumping."

report submitted for 10th Annual Conf, Magnetism & Magnetic Materials, Minneapolis,  
16-19 Nov 64.

ACCESSION NR: AP4043357

S/0181/64/006/008/2376/2388

AUTHOR: Gurevich, A. G.

TITLE: Paramagnetic amplification of magnetic waves by an elastic wave in a ferrite

CITED SOURCE: Fizika tverdogo tela, v. 6, no. 8, 1964, 2376-2388

TOPIC TAGS: elastic wave, traveling wave interaction, spin wave, ferrite, pumping frequency, magnetoelastic transducer, paramagnetic amplifier, electromagnetic wave, yttrium iron garnet, x band

ABSTRACT: The author calculates the parametric amplification of two traveling magnetic waves in a magnetized ferrite. One of the traveling waves is a spin wave and the other is either an electromagnetic or a spin wave. The pumping wave is assumed to be elastic at the sum frequency. All three waves are assumed to propagate in the direction of the constant magnetic field. This analysis differs

Cord 1/3

ACCESSION NR: AP4043357

from that of Comstock (J. Appl. Phys., v. 34, 1465, 1963), who assumed a spin pumping wave. One of the amplified waves can be in limiting cases either electromagnetic or a spin wave, while the second must be a spin wave. Expressions are obtained for the threshold amplitude of the elastic wave and for the growth coefficient of the amplified waves at elastic-wave amplitudes above threshold. Relations are obtained for the frequencies and wave numbers of the amplified waves as functions of the pumping frequency and the magnitude of the constant magnetic field, and also for the limits of variation of the magnetic field (at constant frequency) or of the frequency, at which amplification can take place. The main results of the calculation is that the longitudinal magnetic wave propagating in the magnetized ferrite compensates, as a result of magnetoelastic coupling, for the losses of the two other waves propagating in the direction. The amplification of these waves takes place if the amplitude of the elastic wave exceeds a certain threshold value, which does not depend explicitly on the frequency or the wave numbers of the amplified waves and decreases with de-

Cord 2/3



ACCESSION NR: AP4043357

from that of Comstock (J. Appl. Phys., v. 34, 1465, 1963), who assumed a spin pumping wave. One of the amplified waves can be in limiting cases either electromagnetic or a spin wave, while the second must be a spin wave. Expressions are obtained for the threshold amplitude of the elastic wave and for the growth coefficient of the amplified waves at elastic-wave amplitudes above threshold. Relations are obtained for the frequencies and wave numbers of the amplified waves as functions of the pumping frequency and the magnitude of the constant magnetic field, and also for the limits of variation of the magnetic field (at constant frequency) or of the frequency, at which amplification can take place. The main results of the calculation is that the longitudinal magnetic wave propagating in the magnetized ferrite compensates, as a result of magnetoelastic coupling, for the losses of the two other waves propagating in the direction. The amplification of these waves takes place if the amplitude of the elastic wave exceeds a certain threshold value, which does not depend explicitly on the frequency or the wave numbers of the amplified waves and decreases with de-

Card 2/3

ACCESSION NR: AP4043357

creasing magnetic losses in the ferrite and with increasing magneto-elastic constant. In the case of yttrium garnet in the 3-cm band the threshold power of the pumping wave is a fraction of a watt. The effect of the various assumptions made in the calculation are discussed. Experimental realization of the method is limited so far by the attainable power of elastic wave in the microwave band. The results show that the amplification of spin waves may be one of the causes of limitation of power of the elastic wave in the ferrite. Orig. art. has: 5 figures and 31 formulas.

ASSOCIATION: Institut poluprovodnikov AN SSSR, Leningrad (Institute of Semiconductors, AN SSSR)

SUBMITTED: 24Feb64

ENCL: 00

SUB CODE: SS

NR REF SOV: 002

OTHER: 015

Cord 3/3

L 14840-65 AS(mp)-2/RAEM(a)/ESD(dp)/ESD(t)

ACCESSION NR: AP4048435

S/0181/64/006/011/3475/3478

AUTHORS: Manuylova, A. A.; Gurevich, A. G.

TITLE: Frequency dependence of the width of the resonance curve of polycrystalline yttrium garnet

SOURCE: Fizika tverdogo tela, v. 6, no. 11, 1964, 3475-3478

TOPIC TAGS: yttrium iron garnet, resonance width, polycrystal, ferrite, anisotropy

ABSTRACT: It is shown that the spin-wave method which is widely used to determine the width  $\Delta H$  of the resonance curve in polycrystals does not necessarily apply in the case of ferrites with low anisotropy, such as yttrium iron garnet, because the effective anisotropy field is no longer much smaller than the magnetization. The authors therefore measured the frequency dependence of  $\Delta H$  of the ferrite in a rectangular waveguide and a coaxial line, using a method proposed

Card 1/2

L 114840-65

ACCESSION NR: AP4048435

by V. G. Kalina. The results did not confirm the frequency dependence derived from the dispersion equation for an isotropic medium. An attempt is made to reconcile the results by taking into account the anisotropy of the spin-wave spectrum. Certain deductions are also drawn concerning the relaxation processes in polycrystals and concerning some preferred directions of spin-wave propagation. Orig. art. has: 2 figures.

ASSOCIATION: None

SUBMITTED: 17Jun64

ENCL: 00

SUB CODE: SS, EM

NR REF SOV: 001

OTHER: 006

Card 2/2

ACCESSION NR: AP4023391

S/0048/64/028/003/0462/C469

AUTHOR: Gurevich, A.G.; Meg, Hsien-chen; Starobinets, S.S.; Solov'yev, V.I.; My\*l'nikova, I.Ye.

TITLE: Anisotropy of the resonance curve width in yttrium garnet doped with rare earth elements /Report, Symposium on Ferromagnetism and Ferroelectricity held in Leningrad 30 May - 5 June 1963/

SOURCE: AN SSSR. Izvestiya, Seriya fizicheskaya, v.28, no.3, 1964, 462-469

TOPIC TAGS: spin wave, spin wave resonance, resonance curve, resonance curve width, resonance curve anisotropy, yttrium garnet, doped yttrium garnet

ABSTRACT: Perfect yttrium garnet single crystals are ideal for investigating various effects involved in ferromagnetic resonance. By doping the crystals with different ions - specifically, rare earth ions - the anisotropy and relaxation produced by such ions can be observed in pure form. In the present work there were carried out resonance measurements with doped yttrium garnet single crystals grown from a molten solution by the Nielsen-Dearborn (J.Phys.Chem.Solids, 5, 202, 1958) technique. The initial yttrium oxide was 99.9995% pure; the purity of the rare

Card 1/3

ACCESSION NR: AP4023391

earth oxides was better than 99.99%. The specimens were ground to spherical shape by the air spinning procedure of I.Ye.Gubler (Pribo<sup>ry</sup>\* 1 tekhnika eksperimenta, No. 5, 145, 1960) and polished with fine-grain abrasive. The measurements were performed in the 3-cm range with the specimens located in the antinode of the magnetic field in TE<sub>10n</sub> rectangular cavities. For the measurements in the 4.2 to 78°K range the reflection cavity was immersed in liquid helium and the measurements were made at 4.2°K and during the temperature rise after evaporation of the helium. The measurements at 78° and higher were carried out by the procedure described earlier (Fiz. tverdogo tela, 5, 740, 1963; Pribo<sup>ry</sup>\* 1 tekhnika eksp., No. 1, 73, 1963). The width of the spin-wave resonance curve was determined by measuring the spin wave excitation threshold with longitudinal pumping, as described by E.Schloemann, J.Green and U. Milano (J.Appl.Phys., 31, No. 5, Suppl. 386S, 1960). The pulse duration was 3 microsec. The experimental results are presented in the form of a series giving the angle dependences of  $2\Delta H$  and  $H_{res}$  for different specimens as well as the temperature dependence for yttrium garnet with 0.01% Tb. The  $2\Delta H$  curves exhibit structure. The principal conclusions are: 1. At temperatures above the point of the temperature maximum of  $2\Delta H$  there obtain in rare earth doped yttrium garnet angular  $2\Delta H$  minima at angles corresponding to closer approach to the energy levels of the rare earth

Card 2/3

ACCESSION NR: AP4023391

ions. 2. The angular maxima of  $2\Delta H$  in yttrium garnet at low temperatures exhibit fine structure at least in the case of some rare earth impurities. 3. The anisotropy of the spin wave resonance curve width, due to rare earth ions, does not depend significantly on the wavenumber. Orig.art.has: 9 figures.

ASSOCIATION: none

SUBMITTED: 00

DATE ACQ: 10Apr64

ENCL: 00

SUB CODE: PH

NR REF SOV: 006

OTHER: 010

Card 3/3

L. 2200-66 EWT(1)/EWT(m)/EPF(c)/ETC/ENG(m)/EWP(t)/EWP(b) IJP(z) RDM/JD/WW/

GG

ACCESSION NR: AP5014577

UR/0181/65/007/006/1761/1769

AUTHOR: Solov'yev, V. I., Gurevich, A. G.

TITLE: Ferromagnetic resonance in a terbium-doped yttrium garnet

SOURCE: Fizika tverdogo tela, v. 7, no. 6, 1965, 1761-1769

TOPIC TAGS: yttrium compound, garnet, ferromagnetic resonance, temperature dependence, angular distribution, line splitting, paramagnetic relaxation

ABSTRACT: This is a continuation of earlier work on ferromagnetic resonance (FTT v. 5, 2019, 1963), where a "fine structure" of the absorption bands was observed, and of an earlier study (Izv. AN SSSR ser. fiz. v. 28, 462, 1964), where a temperature dependence of the width of the resonance curve was observed. To explain these phenomena, the authors extended their earlier measurements to a broader temperature range, to different frequencies, and to more carefully oriented samples. The measurements were made in single crystals of yttrium ferrite with small amounts of terbium added, in the

Card 1/2



L 2200-66

ACCESSION NR: AP5014577

18  
frequency bands near 9300 and 4500 Mc. At low temperature, the angle-dependent resonance absorption bands caused by the coming together of the energy levels of the terbium ions split into two peaks. At the angles corresponding to the absorption bands, the temperature dependence of the width of the resonance curve is characterized by two maxima. These features of the ferromagnetic resonance are explained on the basis of the theory of the "slow relaxation" mechanism. The results confirm the existence of two temperature maxima and the previously observed fine structure, which are shown to decrease at a lower temperature but to remain constant in frequency. It is demonstrated that the second maximum cannot be due to fast relaxation. "The authors thank A. I. Pil'shechikov, M. I. Klinger, and A. N. Agayev for a discussion of the results and advice and Ye. V. Kolontsova for help with the orientation of the crystals." Orig. art. has: 4 formulas and 6 figures.

ASSOCIATION: Radiotekhnicheskiy institut AN SSSR, Moscow (Radiotechnical Institute, AN SSSR); Institut poluprovodnikov AN SSSR, Leningrad (Institute of Semiconductors, AN SSSR)

SUBMITTED: 28Dec64

44.55 ENCL: 00

SUB CODE: 88

NR REF SOV: 007

OTHER: 009

Card

2/2 DP

GUREVICH, A.G.

Use of experimental-static analysis methods in the rubber industry.  
Kauch. i rez. 24 no.4:15-20 Apr '65. (MIRA 18:5)

1. Nauchno-issledovatel'skiy institut shinnoy promyshlennosti.

ACC NR: AP6034929

SOURCE CODE: GE/0030/66/017/001/00K7/00K9

AUTHOR: Starobinets, S. S.; Lebed, B. M.; Gurevich, A. G.

ORG: Institute of Semiconductors, Academy of Sciences of the USSR, Leningrad

TITLE: Parametric resonance in a calcium-bismuth-vanadium garnet

SOURCE: Physica status solidi, v. 17, no. 1, 1966, K7-K9 and appropriate insert following p. 433

TOPIC TAGS: garnet, parametric resonance, calcium bismuth vanadium garnet, yttrium iron garnet, ferrimagnet, magnetoacoustic resonance, Q factor, resonance frequency, magnetic moment, garnet magnetic Q factor, garnet acoustic Q factor, garnet magnetoelastic interaction

ABSTRACT: Observation of magnetoacoustic resonance (MAR) in a recently synthesized ferrimagnet, i. e., in  $\text{Ca}_{2.7}\text{Bi}_{0.3}\text{Fe}_{3.65}\text{V}_{1.35}\text{O}_{12}$  iron garnet crystals, was reported. The sample, with a highly polished sphere, was put into a waveguide at a distance of  $\lambda_g/2$  from the short circuit. The signal, which was proportional to the resonance frequency magnetic moment, was received by

Card 1/2

ACC NR: AP6034929

a wire loop and fed into a spectrum analyzer. By comparing threshold amplitudes of uniform precession for MAR in an yttrium iron and a Ca-Bi-V garnets, the magnetoelastic coupling coefficients  $b_1$  and  $b_2$  of the latter substance was determined. The ratio of these amplitudes was obtained experimentally. The magnetic Q factors of both garnets are nearly equal, and it is reasonable to assume that their acoustic Q factors are of the same order. The magnetoelastic interaction in Ca-Bi-V is nearly two orders of magnitude weaker than that in the YIG;  $b_1$  and  $1/2 b_2$  in the Ca-Bi-V garnet have nearly the same value but opposite signs. Orig. art. has: 1 figure and 2 formulas. [DR]

SUB CODE: 08, 20/SUBM DATE: 07Jul66/ORIG REF: 002/OTH REF: 006/

Card 2/2

L 26123-66 EWT(1)/EWT(m)/T/EWP(t) IJP(c) CG/WW/JD/HW/JG

ACC NR: AP6015805

SOURCE CODE: UR/0386/66/003/010/0408/0410

AUTHOR: Golovenchits, Ye. I.; Gurevich, A. G.; Sanina, V. A.

ORG: Institute of Semiconductors, Academy of Sciences SSSR (Institut poluprovodnikov Akademii nauk SSSR)

TITLE: Magnetic resonance in  $\text{RbNiF}_3$  single crystals

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 3, no. 10, 1966, 408-410

TOPIC TAGS: rubidium compound, single crystal, magnetic structure, magnetic anisotropy, antiferromagnetic material, magnetic resonance

ABSTRACT: The authors present results of measurements of electron magnetic resonance in single-crystal  $\text{RbNiF}_3$  below the point of transition into the magnetically ordered state (145K). The measurements were made in the frequency range 7.7--43.2 Gcs at 77K in constant and pulsed magnetic fields. The samples were spheres of 0.5--0.9 mm diameter. Although the magnetic structure of  $\text{RbNiF}_3$  has not yet been fully explained, the results are in agreement with the simple model of a uniaxial ferromagnet with negative easy-plane anisotropy. This is deduced from an analysis of plots of the resonance frequency against the magnetic field and the resonance field against the angle between the field and the [0001] axis. Although the value of the magnetic moment of  $\text{RbNiF}_3$  shows it to be an uncompensated antiferromagnet, it is pointed out that ferromagnetic ordering is realized in this substance in the presence of magnetic

Card 1/2

L 26123-66

ACC NR: AP6015805

$Ni^{+2}$  ions only. The authors thank G. A. Smolenskiy, at whose initiative this work was performed, and P. P. Syrnikov, who supplied the single crystals, M. F. Bryzhin for consultations concerning the sample orientation, and N. M. Solin and V. A. Berenberg for help with the measurements. Orig. art. has: 2 figures and 2 formulas.

SUB CODE: 20/ SUBM DATE: 25Mar66/ ORIG REF: 001

Card 2/2 (16)

1 00752-07 MWT(1) IJP(c)

ACC NR: AP6029119

SOURCE CODE: UR/0048/66/030/006/1002/1007

AUTHOR: Gurevich, A.G.; Lobed', B.M.; Mironov, S.A.; Starobinets, S.S.; Titova, A.G.; Shevlyagin, K.V.

ORG: Institute of Semiconductors, Academy of Sciences of the USSR (Institut poluprovodnikov Akademii nauk SSSR)

TITLE: Excitation of magnetoelastic waves [Report, All-Union Conference on the Physics of Ferro- and Antiferromagnetism held 2-7 July 1965 in Sverdlovsk]

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no. 6, 1966, 1002-1007

TOPIC TAGS: yttrium compound, garnet, single crystal, spin phonon interaction, magnetoacoustic effect

ABSTRACT: The authors have investigated the excitation at frequencies from 0.2 to 3 kHz of magnetoelastic waves in three single crystal yttrium garnet specimens from 2.3 to 6.9 mm long and from 2 to 5 mm in diameter having polished ends that were parallel within 15" and perpendicular to the [111] axis within 1°. The constant external magnetic field was uniform and parallel to the axis of the specimen (the [111] axis of the crystal). The specimen was mounted between two identical cavity resonators, of which one served to produce the exciting high frequency magnetic field (which was parallel to the face of the specimen) and the other, to detect the transmitted wave. Magnetoelastic waves could be observed under optimal conditions with an

Card 1/2

L 08752-67

ACC NR: AP6029119

excitation power of the order of microwatts. The delay of the magnetoelastic wave decreased monotonically with increasing magnetic field strength in qualitative agreement with the theory of E.Schlömann and R.I.Joseph (J. Appl. Phys., 35, 159, 167, 2382 (1964)). The magnetoelastic waves were much less highly damped than is predicted by the Schlömann theory. The authors discuss possible reasons for this behavior alternative to the suggestion of W.Strauss and F.G.Eggers (Appl. Phys. Lett., 6, 18 (1965)), which they find unconvincing. Magnetoelastic waves were also observed in magnetic fields that were somewhat stronger than the maximum fields in which they should theoretically appear. It is concluded that further theoretical work is needed. The authors thank G.A.Smolenskiy for valuable discussions. Orig. art. has: 5 formulas and 5 figures.

SUB CODE: 20

SUBM DATE: 00

ORIG. REF: 002

OTH REF: 015

Card 2/2 bc



ACC NR: AP6033556

SOURCE CODE: UR/0181/66/008/010/2958/2964

AUTHOR: Gurevich, A. G.; Lebed', B. M.; Mironov, S. A.; Starobinets, S. S.; Shevlyagin, K. V.

ORG: Institute of Semiconductors, AN SSSR, Leningrad (Institut poluprovodnikov AN SSSR)

TITLE: Influence of the distribution of the magnetic field in a sample on the excitation of magnetoelastic waves

SOURCE: Fizika tverdogo tela, v. 8, no. 10, 1966, 2958-2964

TOPIC TAGS: magnetoelastic wave, magnetic field, yttrium, ~~iron-garnet~~, ferrite, *single crystal*

ABSTRACT: In view of the disparity between the theory of magnetoelastic wave propagation, developed by E. Schlomann and R. I. Joseph (J. Appl. Phys. v. 35, 159, 167, 2382, 1964), and numerous experimental results, including those by the authors (Izv. AN SSSR ser. fiz. v. 30, 1002, 1966), a more detailed experimental study was made of the mechanism of the magnetoelastic waves, especially at different distributions of the internal magnetic field. The excitation was with a 1000 MHz generator operating in the pulsed mode ( $\sim 1$   $\mu$ sec pulse duration) at maximum power  $\sim 0.5$  watt. Single-crystal yttrium garnet was used as the sample. The external field was homogeneous and parallel to the sample axis. The internal field was varied by attaching to the single-crystal sample additional polycrystalline yttrium-iron-garnets of different lengths. The tests consisted of measuring the delay time of the waves and the total losses of the magneto-

Card 1/2

ACC NR: AP6033556

elastic pulses. The results showed that a series of magnetoelastic pulses was excited at all values of maximum gradient of the internal field (which ranged from 2000 to 3500 Oe/cm). No waves were excited when the internal field was uniform. The plots of the losses of the delayed pulses vs. the external field exhibit maxima and decrease with increasing field gradient. The damping of the pulse sequences is small ( $\sim 2$  db) and is practically independent of the field gradient. The upper limit of external fields at which excitation takes place is much higher than predicted by the theory of Schlomann and Joseph, but in weak fields the theory agrees with the dependence of the delay time and of the losses on the external field. The discrepancy in the case of strong fields may be due to the action of an additional excitation mechanism, confined to the surface of the sample, which was not accounted for in the theory. The authors thank G. A. Smolenskiy for discussing the results and A. G. Titova for supplying the single crystals. Orig. art. has: 6 figures, 5 formulas, and 1 table.

SUB CODE: 20/ SUBM DATE: 01Mar66/ ORIG REF: 003/ OTH REF: 012

Card 2/2

SHNITSER, S.S., kandidat ekonomicheskikh nauk; KARAKOZOVA, V.V.; KAPLAN,  
N.M.; ~~GURBYLOV, A.I.~~

Comparative economic effectiveness of building meat enterprises  
of different capacities. Trudy VNIIMS no.6:127-139 '54. (MLRA 10:8)  
(Meat industry)

GUREVICH, A.I.

135-3-15/17

SUBJECT: USSR/Welding

AUTHOR: Gurevich A.I., Engineer

TITLE: Increasing the Stability of Ignitrons in Welding Machines.  
(Povysheniye ustoychivosti ignitronov v svarochnykh mashinakh).

PERIODICAL: "Svarochnoye Proizvodstvo", 1957, # 3, p 28, (USSR)

ABSTRACT: At the present time the Soviet industry produces ignitrons of types "И-100/1000", "И-50/1.5", "И-20/1.5", with ignition voltage of 175 v. In electric systems with dependent ignition these ignitrons do work satisfactorily at 380 volts a.c. and up. At 220 v, they become unstable, and no-ignition intervals occur. The welding machines in which the ignitrons are used are therefore designed exclusively for 380 v. If such a machine has to work on circuit voltage of 220 v, it needs an additional transformer or autotransformer which raises the circuit voltage to 380 v and possesses the power equal to that of the welding transformer.

But there is a simpler way to make ignitrons work in a 220 v circuit. The voltage in the ignitron ignition circuit can be raised by an additional low-power voltage transformer. The

Card 1/2

135-3-15/17

TITLE: Increasing the Stability of Ignitrons in Welding Machines.  
(Povysheniye ustoychivosti ignitronov v svarochnykh mashinakh).  
circuit diagram of a normal ignitron contactor with the additional two-coil (220v and 160v) transformer "TpA" is shown in the article.  
Operation of the recommended system is described.  
The article contains 1 circuit diagram and 2 oscillograms.

ASSOCIATION: Plant "Elektrik". (Zavod "Elektrik")

PRESENTED BY:

SUBMITTED:

AVAILABLE: At the Library of Congress.

Card 2/2

GUREVICH, A. I.

GUREVICH, A.I., inzh.

Modulator for welding current. Vest.elektroprom. 28 no.8:58-60

Ag '57.

(MIRA 10:10)

1.Zavod "Elektrik".

(Electric welding)

GUREVICH, A. I.

Cand Tech Sci

Dissertation: "Elastic Deformations of Thin-Walled Steel Pipe with  
a Plane or A Spatial Curvilinear Axis."

11 Oct 49

Central Sci Res Inst. of Industrial Structures

**SO Vecheryaya Moskva**  
**Sum 71**

GUREVICH, A. I. inzhener.

Designing three-dimensional pipelines. Issl. po teor. sooruzh. no. 4.  
299-303 '80.

(MLRA 10:8)

(Pipe)



GUREVICH, A.I., kandidat tekhnicheskikh nauk (Moscow)

Normal stresses in bending three-dimensional pipes. Issledovaniia  
po teorii soorushenii. Sbornik statei no. 6:329-334 '54. (MLBA 7:11)  
(Structures, Theory of) (Strains and stresses) (Elastic plates  
and shells)

GUREVICH, A.I., kandidat tekhnicheskikh nauk.

Letter to the editor. Vest.mash.36 no.11:31 N'56. (MIRA 10:1)  
(Pipe bending)

649

AUTHOR: Gurevich, A.I., Candidate of Technical Sciences.

TITLE: On the design of self-compensation for thermal expansion in steam piping. (K Raschetu truboprovodov na samokompensatsiyu pri teplovom rasshirenii.)

PERIODICAL: "Teploenergetika" (Thermal Power), 1957, Vol. 4, No. 6, pp. 57 - 59 (U.S.S.R.)

ABSTRACT: This is a mathematical article. The design of pipe-runs in three dimensions reduces to solution of three simultaneous equations for the projected lengths of the pipe-run on the three co-ordinate axes. The fundamental equations are simplified by the introduction of dimensionless coefficients and a solution is given. Corrections are made when the piping is under tension when cold and when the ends are displaced on change of temperature. Calculations of displacement could be simplified by drawing up tables of equivalent lengths and moments of inertia of various straight and curved parts of piping. The existing standards do not contain all the information necessary to formulate such tables, and no allowance is made for the reduced rigidity of bent pipes which was approximately determined by V.G. Selyavo (Vestnik Mashinostroenie No. 5, 1954). The reciprocal of his coefficient is introduced in the present work. Workings are given for the case of a straight pipe with one end fixed and a bending force applied to the free end.

11 figures, 4 literature references (Russian).

AVAILABLE.

GUREVICH, A.I.

Small reducing gear with a high gear ratio. Sbor.nauch.-tekh.inform.  
Azerb.inst.nauch.-tekh.inform.Ser.Mashinostroi.prom. no.4:25-28 162.  
(MIRA 18:8)

GUREVICH, A.I., kand.tekhn.nauk

Calculation of pipelines with consideration of their strength  
and weight loads. Elek. sta. 34 no.1:25-33 Ja '63. (MIRA 16:2)  
(Pipelines)

GUREVICH, A.I., inzh.; SOKOLOV, M.V., inzh.; SAUTIN, S.N., inzh.

Automatic pulse-frequency liquid proportioning apparatus with  
electric control. Khim. i nef't. mashinostr. no. 5:6-8 N 164  
(MIRA 18:2)

GUREVICH, A.L.; SAUTIN, S.N.; SOKOLOV, M.V.

Pulse measuring devices for liquid consumption proportions.  
Priborostroenie no.11:15-16 N '64. (MIRA 18:1)

I. 20808-05 EWT(s)/EWA(d)/EWP(v)/EWP(k)/EWP(h)/EWP(L) 15-1 APTC(p)

ACCESSION NR: AR4048235

S/0137/64/000/009/E036/E036

SOURCE: Ref. zh. Metallurgiya, Abs. 9E237

AUTHOR: Shablygin, S. V.; Balatskiy, A. A.; Lashchiver, S. M.; Gurevich, A. I.

TITLE: Contact welding with the application of peaked current pulses

CITED SOURCE: Tr. N.-i. in-ta tekhnol. avtomob. prom-sti, vy\*p. 12, 1964, 33-41

TOPIC TAGS: welding, welding equipment, welding current, contact welding, current pulse, peaked current pulse

TRANSLATION: Preliminary results are presented of an investigation of the operation of a contact welding machine whose design makes it possible to obtain peaked pulses of welding current which have a considerable magnitude but which are of short duration. A basic diagram of the setup is given. The effect of the angle of ignition of the ignitrons on the form of the pulse produced by the welding current and on the magnitude of the voltage in the condenser, as well

Card 1/2



L 20808-55

ACCESSION NR: AR4048235

as the effect of capacitance on the nature of the process set up, is considered. A process for rating current and voltage at the moment the power is switched on is described, and there is given a comparison of curves for current and voltage with the condenser and without it. The experiments made it possible to establish that in the operation of a welding machine using a synchronized circuit breaker followed by a condenser it is possible: 1. to produce peaked current pulses with a gradual increase in the peak magnitudes of the pulses, 2. to increase the limiting power of the welding transformer, and 3. to increase the power coefficient of the equipment to a value close to unity under the condition that low power (300-600 millifarads) condensers are used, 12 figures.

STB CODE: MM

ENCL: 00

Card 2/2

L 8482-66 EWT(d)/EWP(v)/EWP(k)/EWP(h)/EWP(l)/ETC(m) WW

ACC NR: AP5028519

SOURCE CODE: UR/0286/65/000/020/0099/0099

AUTHORS: Gurevich, A. I.; Reynin, R. V. 48  
B

ORG: none 55 55

TITLE: A pressure regulator for pneumatic systems. Class 42, No. 175754

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 20, 1965, 99

TOPIC TAGS: <sup>10</sup>pressure regulator, mechanical engineering, pneumatic device, pressure control, membrane, PNEUMATIC CONTROL SYSTEM 14 55

ABSTRACT: This Author Certificate presents a pressure regulator for pneumatic systems. The regulator contains a valve controlled by the rod of a spring-loaded membrane. The chamber of this membrane is connected to the narrow part of the discharge opening. To equalize the discharge pressure of the regulator at various air consumptions, the discharge opening is made in the form of an expanding nozzle adjacent to the narrow part.

SUB CODE: 13/ SUBM DATE: 18Dec62

BVK  
Card 1/1

UDC: 621.646.42

GUREVICH, A.I.; SHEYNKER, Yu.N.

Tautomerism in a series of oxyacridines and dioxybiacridyls. Khim.  
nauka i prom. 3 no.1:129-130 '58. (MIRA 11:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy  
institut im. S. Odrzhonikidze.  
(Acridine) (Biacridinium compounds)

*Gurevich A. I.*

79-2-7/64

AUTHOR: Gurevich, A. I.

TITLE: Interaction of the Decarboxylating Acridincarboxylic-9-Acids With Carbonyl-Containing Compounds (Vzaimodeystviye dekarbok-siliruyushchikhsya akridinkarbonovykh-9 kislot s karbonil-soderzhashchimi soyedineniyami)

PERIODICAL: Zhurnal Obshchey Khimii, 1958, Vol. 28, Nr 2, pp. 322-325 (USSR)

ABSTRACT: The secondary reactions accompanying the decarboxylation of heterocyclic carboxylic acids in the solvent have been little investigated. It was supposed that the decarboxylating acids exist in the form of amphoteric ions and that the carbanion forming during decarboxylation reacts like the  $\text{CH}^-$ -ion. In the present paper the author studies analogous reactions of acridincarboxylic-9-acids. The decarboxylation of the acids was performed in various aldehydes and ketones as well as in the ethyl ether of p-nitrobenzoic acid in the temperature range of  $200^\circ\text{C}$  in a nitrogen current (for avoiding the oxidation of possible reaction products by atmospheric oxygen). As a result of the reaction of acridincarboxylic-9-acids with corresponding aldehydes the author obtained 9-benzoyl-, 9-o-benzoyl chloride-

Card 1/3

72-2-7/64

Interaction of the Decarboxylating Acridincarboxylic-9-Acids With Carbonyl-Containing Compounds

and 9-nitrobenzoylacridines as well as 2-methoxy-6-chloro-9-(p-nitrobenzoyl)acridine. In all cases the yield amounted to 30 %. The synthesized substances represent no ordinary ketone derivatives (phenylhydrazones, thiosemicarbazones) and the assumption of a ketone function in the case of these compounds is based on the absence of active hydrogen atoms in them. The author noticed that the decarboxylation of 2-methoxy-6-chloro-acridincarboxylic-9-acids in a p-nitrobenzaldehyde medium takes place comparatively slowly, even in the temperature range of 200°C, whereas in a p-dimethylamino-benzaldehyde and in a 1-diethylamino-pentatone-4 medium it takes place rapidly, already at 80-100°C. This no doubt contradicts the indication by Khemik and others (reference 5) that the activation energy of the decarboxylation reaction is independent on the solvent. In the two latter cases an ionic mechanism of the reaction must no doubt be assumed. Summary: 1) The decarboxylation of acridincarboxylic-9-acids in a medium of carbonyl-containing compounds was investigated. It was shown that derivatives of 9-benzylacridine are formed as a result of the secondary reaction with aldehydes. No secondary reactions are observed in the ketones and in the ether of carboxylic acid; probably due to steric hindrance.

Card 2/3

79-2-7/64

Interaction of the Decarboxylating Acridincarboxylic-9-Acids With Carbonyl-Containing Compounds

ces. 2) The earlier suggested ionic mechanisms of the reaction does not explain some of the facts discovered. 3) A scheme with a radical reaction mechanism was suggested. There are 12 references, 1 of which is Slavic.

ASSOCIATION: ~~All-Union~~ Scientific Research Institute for Chemical Pharmaceutics imeni S. Ordzhonikidze  
(Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut imeni S. Ordzhonikidze)

SUBMITTED: January 30, 1957

AVAILABLE: Library of Congress

Card 3/3

5(3)

SOV/79-29-8-43/81

AUTHOR: Garevich, A. I.

TITLE: Steric Hindrances in the Series of 9,9'-Biacridyl

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 8, pp 2652-2655 (USSR)

ABSTRACT: The steric hindrances are decisive in the attempts at building up the second acridine nucleus in the 9,9'-biacridyls. Due to this fact, the synthesis of the unsymmetrical 9,9'-biacridyls by means of a gradual building-up of the second nucleus has so far not been possible. It was the purpose of the present paper to extend the synthetic possibilities for the investigations in the series of 9,9'-biacridyl in order to perform the synthesis of the unsymmetrical compounds of this series by a gradual building-up of the second acridine nucleus. The schemes chosen by the authors were based on thoroughly investigated reactions which yield in the synthesis less complex acridine derivatives, and proceed readily (Scheme 1). According to the first scheme, the condensation of 9-(o-benzoyl--chloride)-acridine with *m*-anisidine with many catalysts was not possible. Also the attempts at closing the second acridine ring by treat-

Card 1/3

Steric Hindrances in the Series of 9,9'-Biacridyl

SOV/79-29-8-43/81

ing the derivatives of 9-(2'-aniline-benzoyl)-acridine with a mixture of sulfuric acid and glacial acetic acid which is frequently used in other cases, were unsuccessful like the attempts at carrying out the cyclization with polyphosphoric acid (Ref 2) or phosphorus oxychloride. It may be seen from all these factors that the difficulties in the cyclization of the derivatives of 9-(2'-aniline-benzoyl)-acridine into the 9,9'-biacridyls, as well as the previously indicated inertness of the 9-benzoyl acridines, as compared with the ordinary compounds reacting with the carbonyl group, are due to steric hindrances. The other method of synthesizing the unsymmetrical 9,9'-biacridyls was also unsuccessful. It was impossible to carry out the condensation of 9-(o-benzoyl chloride)-acridine with m-phenylene diamine. Final attempts at obtaining the derivatives of 9,9'-biacridyl according to scheme 2 were also unsuccessful. The results obtained lead to the conclusion that owing to steric hindrances, the synthesis of the 9,9'-biacridyls by means of a gradual building-up of the second nucleus seems to be rather improbable. In the experiments, the mixture of copper sponge and cuprous chloride was

Card 2/3



Steric Hindrances in the Series of 9,9'-Biacridyl

SOV/79-29-8-43/61

found to be more efficient in Ullmann's reactions than the usual catalysts. There are 4 references, 2 of which are Soviet.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut imeni S. Ordzhonikidze (All-Union Scientific Chemopharmaceutical Research Institute imeni S. Ordzhonikidze)

SUBMITTED: July 5, 1958

Card 3/3

SOV/79-29-8-44/21

5(3)

AUTHOR: Gurevich, A. I.

TITLE: Complexes of Sulfonamides With Amines

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 8, pp 2655-2658 (USSR)

ABSTRACT: In addition to the papers of references 1-3 (Kirsanov and Zolotov, Refs 2,3), the author tried to form complexes from organic sulfonamides with amines, to separate them and to investigate their properties. He was able to obtain complexes of sulfonilamide with pyridine, of di-(*m*-carbo-methoxy-amino-benzene-sulfo)-iminothiazoline with pyridine and of di-(*n*-acetamino-benzene-sulfo)-imino thiazoline with diethylamine. In the two latter cases, no hydrogen atom exists on the nitrogen of the sulfonamide groups. The formation of complexes of such sulfonamide derivatives with amines indicates clearly that the linkage with the nitrogen of the amine takes place without participation of the proton. The capability of forming complexes with amines seems to be common to all sulfonamides. In these complexes, the S-N bond of the sulfonamide group is weakened, and is more readily affected by the influence of various reactants. Heating of the complexes of the sulfonamides with

Card 1/2

Complexes of Sulfonamides With Amines

SOV/79-29-8-44/81

primary and secondary amines may cause the rupture of the S-N bond in the sulfonamide group and the formation of a new sulfonamide. The complexes of the sulfonamides with tertiary amines hydrolyze readily, and yield the salt of the corresponding sulfonic acid. Two schemes were suggested for the transformations of these complexes. In the given scheme 1, the reactions take place with primary and secondary amines, in scheme 2 with tertiary amines. There are 13 references, 7 of which are Soviet.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut imeni S. Ordzhonikidze (All-Union Scientific Chemopharmaceutical Research Institute imeni S. Ordzhonikidze)

SUBMITTED: July 5, 1958

Card 2/2

5(4)

AUTHORS:

Gurevich, A. I., Sheynker, Yu. N.

SOV/76-33-4-21/32

TITLE:

On the Tautomerism of Some Derivatives of Heterocyclic Compounds (O tautomerii nekotorykh proizvodnykh geterotsiklicheskikh soyedineniy). VIII. Infrared and Ultraviolet Spectra and the Structure of Oxyacridines and Dioxybiacridyls (VIII. Infrakrasnyye i ul'trafiioletovyye spektry i stroyeniye oksiakridinov i dioksibiakridilov)

PERIODICAL:

Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 4, pp 883-892 (USSR)

ABSTRACT:

In previous papers (Refs 1-4) it was shown that the monooxy derivatives of various N-containing heterocycles exhibit an oxo and not an oxy form, when in solution. The tautomerism of the dioxybiacridyls synthesized by the authors (Ref 8) was hitherto not investigated. Because of several contrasting data found in publications, a thorough investigation of tautomerism in oxyacridines (II) is also of interest. For this purpose in the case under review, the authors investigated the infrared absorption spectra of the substances in the crystalline state, and the ultraviolet and the visible absorption spectrum in solutions with solvents of different polarities.

Card 1/3

304/76-33-4-21/32

On the Tautomerism of Some Derivatives of Heterocyclic Compounds. VIII. Infrared and Ultraviolet Spectra and the Structure of Oxyacridines and Dioxybiacridyls

The infrared absorption spectra were obtained on the spectrometer IKS-11, and the ultraviolet and the visible absorption spectra on the spectrophotometer SF-4. The method of synthesizing all the isomeric oxy- and methoxy acridines, as well as the dioxy- and dimethoxybiacridyls had already been described (Ref 8). The results obtained are tabulated (Tables 1, 2) along with some spectral curves (Figs 1-7). It was found that in the crystalline state, 4-oxyacridine and 4,4'-dioxy-9,9'-biacridyl have an oxy structure with an intramolecular hydrogen bond OH...N. The other compounds (I) and (II) (except acridone-9) have likewise an oxy structure, but with a very strong intermolecular hydrogen bond OH...N and a strong molecular polarization. To be true, these bonds may possibly occur as hybrid ions. An oxy-oxo tautomerism was observed in the solutions of 1- and 3-oxyacridine and 1,1'- and 3,3'-dioxy-9,9'-biacridyl. 4-oxyacridine does not exhibit any tautomerism, whereas in the case of 2-oxyacridine a tautomerism was observed under the participation of oxy- and hybrid ion form. Acridone-9 is completely in the oxo-form even when in nonpolar solutions. A special case was offered by 4-oxy acridine, i.e. the oxy-

Card 2/3

SOV/76-33-4-21/32

On the Tautomerism of Some Derivatives of Heterocyclic Compounds. VIII.  
Infrared and Ultraviolet Spectra and the Structure of Oxyacridines and  
Dioxybiacridyls

form is stabilized by an additional intramolecular hydrogen bond. The necessary conditions for an oxy-oxo tautomerism are complied with in the solutions of 2,2'-dioxy-9,9'-biacridyl, in which connection the required coplanarity of the molecule cores (corresponding to the oxo-form) is explained without taking into consideration of steric hindrance. There are 7 figures, 2 tables, and 16 references, 6 of which are Soviet.

ASSOCIATION: Khimiko-farmatsevticheskiy institut im. S. Ordzhonikidze Moskva  
(Chemico-pharmaceutical Institute imeni S. Ordzhonikidze  
Moscow)

SUBMITTED: October 1, 1957

Card 3/3

GUREVICH, A. I.

5(5)

SOV/20-128-1-30/59

## AUTHORS:

Zhenyakin, M. N., Academician, Kolesov, M. N., Arbusov, Yu. A.,  
 Maish Yu-Yan, Meng Hai-Yu, Akhmetov, K. A.,  
 Karapetyan, M. G., Gurevich, A. I.

## TITLE:

Intermediate Stages in the Synthesis of Tetracyclines

## PERIODICAL:

Doklady Akademii nauk SSSR, 1959, Vol 126, Nr 1, pp 113-116  
 (USSR)

## ABSTRACT:

In 1956 the authors synthesized tricyclic ketols of kind (I) (see Fig. 1). The structure of the tricyclic ketol (II) is far as the structure of two rings is concerned. In the third ring they have a reactive double linkage in position 2,3. The present paper investigates the addition of heterogeneous reagents to the 2,3-double linkage of compounds (I) for introducing active groups into their molecules. The active groups are necessary for establishing a 7-grouping (II) in the B-ring and for a further extension of the A-ring of tetracyclines by a method previously elaborated. Investigations have shown that compounds (I) with typical electrophilic reagents such as Hal<sub>2</sub>, HNO<sub>3</sub> and HNO<sub>2</sub> react readily. Thus, corresponding halogen derivatives, epoxides, hydrazine halides, and halogen

Card 1/2

ketones with good yields are formed. Constants and analytical results of synthesized compounds are given in table 1. The synthesis of tricyclic ketols with active groups in the B-ring made by the authors provides the possibility of building up the A-ring of tetracyclines. There are 1 table and 3 references, 2 of which are Soviet.

## ASSOCIATION:

Institut organicheskoy khimii im. M. D. Zelinskogo AN SSSR  
 (Institute of Organic Chemistry Lenin P. D. Zelinsky,  
 Moscow, USSR)  
 Institut biologicheskoy i meditsinskoy khimii AN SSSR  
 (Institute of Biological and Medical Chemistry, ANS USSR)

## SUBMITTED:

June 4, 1958

Card 2/2

GUREVICH, A. I. Cand Chem Sci -- "Spectral study ■ of the structure and tautomeric properties of acridine derivatives." Mos, 1961 (Acad Sci USSR. Inst of Elementary Organic Compounds). (KL, 4-61, 186)



GUREVICH, A.I.; SHEYNKER, Yu.N.

Structure of 4-hydroxy-9-acridanone. Zhur.VKHO 6 no.1:116 '61.  
(MIRA 14:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy  
institut im. S.Ordzhonikidze.  
(Acridanone)

DOBRYNIN, V.N.; GURDEVICH, A.I.; KARAPETYSN, M.G.; KOLOSOV, M.N.; SHEMYAKIN, M.M.

Absolute configuration of tetracycline antibiotics. Izv. AN SSSR. Otd.  
khim. nauk no. 9:1697 S '62. (MIRA 15:10)

1. Institut khimii prirodnikh soyedineniy AN SSSR.  
(Tetracycline) (Antibiotics)

GUREVICH, A.I.

Infrared spectra of acridine derivatives. Opt. i spektr.  
12 no.1:42-53 Ja '62. (MIRA 15:2)  
(Acridine—Spectra)

GUREVICH, A.I.; SHEYNKER, Yu.N.

Tautomerism of certain derivatives of heterocyclic compounds.

Part 7. Tautomerism of acylaminoacridines. Zhur. fiz. khim.  
36 no.4:734-741 Ap '62. (MIRA 15:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy  
institut imeni Ordzhonikidze.  
(Tautomerism) (Amides)

SHIGORIN, D.N.; VOLKOVA, N.V.; PISKUNOV, A.K.; GUREVICH, A.I.

Studying the triplet states of molecules by the methods of  
luminescence and electron paramagnetic resonance. Opt.1 spektr.  
12 no.5:657-659 My '62. (MIRA 15:5)  
(Molecular dynamics) (Luminescence)  
(Paramagnetic resonance and relaxation)

KOLOSOV, M.N.; DOBRYNIN, V.N.; GUREVICH, A.I.; KARAPETYAN, M.G.

Tetracyclines. Report No.16: Absolute configuration of tetracyclines.  
Izv. AN SSSR. Otd.khim. nauk no.4:696-701 Ap '63. (MIRA 16:3)

1. Institut khimii prirodnkh soyedineniy AN SSSR.  
(Tetracycline)

KOLOSOV, M.N.; GUREVICH, A.I.; SHVETSOV, Yu.B.

Tetracyclines. Report no.17: Asymmetrical synthesis of (-)-3-methyl-phthalide-3-carboxylic acid. Izv. AN SSSR. Otd.khim. nauk no.4:701-705 Ap '63. (MIRA 16:3)

1. Institut khimii prirodnnykh soyedineniy AN SSSR.  
(Phthalidecarboxylic acid)

SHEMYAKIN, Mikhail Mikhaylovich; GUREVICH, A. I.; KOLOSOV, M. N.

"Synthesis of anhydrotetracycline related compounds."

Report presented for the 3rd Intl. Symposium on the Chemistry of  
Natural Products (IUPAC), Kyoto, Japan, 12-18 April 1964.



GURNEVICH, A.I., KANAKYAN, M.G., KOLISOV, M.N., ONCHENKO, V.V.,  
SHEMYGIN, M.M.

New method of synthesizing tetracycline ring A. Izv. AN.SSSR.  
Ser.khim. no. 5:945 My '64. (MIRA 17:6)

1. Institut khimii prirodnykh soyedineniy AN SSSR.

KOLOSOV, M.N.; POPRAVKO, S.A.; GUREVICH, A.I.; KOROBKO, V.G.; VASINA, I.V.;  
SHEMYAKIN, M.M.

Tetracyclines. Part 28: Synthesis and reversible isomerization of  
the derivatives of 9-keto-4,5,10-trihydroxy-1,4,4a,9,9a,10-hexahydro-  
anthracene. Zhur. ob. khim. 34 no.8:2534-2539 Ag '64.  
(MIRA 17:9)

1. Institut khimii prirodnkh soyedineniy AN SSSR.

GUREVICH, A.I.; KARAPETIAN, M.G.; KOLOSOV, M.N.; KOROBKO, V.G.;  
ONOPRIYENKO, V.V.; SHEMYAKIN, M.M., akademik

Synthesis of hydronaphthacenes related to anhydrotetracyclines. Dokl.  
AN SSSR 155 no.1:125-127 Mr '64. (MIRA 17:4)

1. Institut khimii prirodnkh soyedineniy AN SSSR.

SHENYAKIN, M.M.; KUDACHOV, M.N.; SE YU-YUEN' (Shên Yü-yüan'); KARAFETYAN, A.S.;  
SHEN' KHUAY-YU' (Shên huai-yü'); GUREVICH, A.I.

Tetracyclines. Report No.21: Synthesis of 2- and 3-substituted  
10-keto-9-hydroxy-9-methyl-1,2,3,4,4a,9,9a,10-octahydroanthracenes.  
Izv. AN SSSR. Ser. khim. no.6:1013-1024. Je '64.

(KIRA 17:11)

1. Institut khimii prirodnikh soedineniy AN SSSR.

GUREVICH, A.I.; KOLOSOV, M.N.; KOPOBKO, V.G.; POINAVKO, S.A.; SHEMYAKIN, M.M.

Tetracyclines: Part 40: Michael's reaction with derivatives of  $\Delta^2$ -  
tricycline DCB. Zhur. ob. khim. 35 no.4:652-659 Ap '65.

(MIRA 18:5)

1. Institut khimii prirochnykh soyedineniy AN SSSR.

GUREVICH, A.I.; KARAPETIAN, N.G.; KOLOSOV, M.N.; KOPORIN, V.G.; JHEMYAN, N.N.

Tetracyclines. Part 42: Synthesis of 11,12-dideoxy-4-dedimethylamino-5 $\alpha$ ,6-anhydrotetracycline. Zhur. ob. khim. 35 no.4:668-673 Ap '65. (MIRA 18:5)

1. Institut khimii prirodnikh soedineniy AN SSSR.

GUREVICH,

25(6)

PHASE I BOOK EXPLOITATION

SOV/2555

Nauchno-tekhnicheskoye obshchestvo priborostroitel'nyy promyshlennosti. Ukrainskoye respublikanskoye pravleniye

Kovrye metody kontrolya i defektoskopii v mashinostroyeni i pri-borostroyeni: [doklady Respublikanskoy konferentsii] (New Methods of Inspection and Flaw Detection in the Machinery and Instrument-manufacturing Industries [Reports of the Conference Held at Kiev, 1956]) Kiev, Gosstelmizdat USSR, 1956. 264 p. 4,700 copies printed.

Sponsoring Agency: Akademiya nauk USSR.

Ed.: A. Amelin; Tech. Ed.: P. Petelyuk; Editorial Board: I. I. Greben', B. D. Grozin, A. Z. Zmudskiy, G. M. Savitskiy, I. D. Panyrman (Dep. Resp. Ed.), and A. A. Shashlovskiy.

PURPOSE: This book is intended for engineers, scientific workers, and technicians dealing with problems of inspection and flaw detection.

COVERAGE: This is a collection of scientific papers presented at a conference sponsored by the Academy of Sciences, USSR, and the Ukrainian Scientific Association of Engineers, Technicians, and Scientists (Ukrainian Scientific Association of Engineers, Technicians, and Scientists). The papers deal with modern methods of inspection and flaw detection used in the machinery- and instrument-manufacturing industries. The subjects discussed include the use of electronic microscopes in the investigation of metal surfaces; X-ray, gamma-ray, luminescence, magnetic, and ultrasonic methods of flaw detection; use of radioactive isotopes; X-ray diffraction methods of metal analysis; and the use of interferometers for measuring length and thickness and determining the coefficient of linear thermal expansion. No personalities are mentioned. References follow several of the papers.

Gurevich, V. M., Engineer, Gor'kiy "Krasnoye Sormovo" Plant. X-Ray Diffraction Quantitative Phase Analysis Using Standard X-ray Photographs

70

Zmudskiy, A. Z., and L. M. Panyrman, Candidates of Physical and Mathematical Sciences, Kiev State University (Inst. of Science and Technology). Problems of Physical Strength and Crack Formation in Cast- hardened Parts

75

Yevseyev, A. V., Engineer, and P. M. Valchikov, Moscow TANIITMASH. Methods and Equipment for Luminescent Flaw Detection

78

Valchikov, P. M., Engineer. Inzhener, G. Gor'kiy (Gor'kiy Automobile Plant). Spectroscopic Analysis in the Laboratory for Spectroscopic Analysis, Gor'kiy Automobile Plant

85

Yermolin, N. I., Candidate of Physical and Mathematical Sciences, TANIITMASH. New Developments in the Field of Magnetic-particle Flaw Detection and Magnetic Metallography

87

Zhigalov, A. V., Candidate of Technical Sciences, Institut, p/ya 126, Moscow (Institute, Post Office Box 126, Moscow). Improved Methods and Equipment for Magnetic Inspection of Petrochemical Parts

106

Lundin, V. A., Engineer, Moscow VNIIL. Instruments for a Magnetic Quality Control Method of the Heat Treatment of Tools Made from High-speed Steels

114

Enin, G. D., Candidate of Technical Sciences, Moscow TANIITMASH. Application of a Magnetic Method for Investigating Heat-resistant Austenitic Alloys

121

Krasovskiy, M. L., Candidate of Technical Sciences, and V. P. Prukhodko, Engineer, Kiev Electric Welding Institute (Inst. Ye. O. Paton. Ultrasonic Structural Analysis of Metals

126

Gubareva, M. B., Candidate of Technical Sciences, and I. M. Yermolov, Moscow TANIITMASH. Ultrasonic Flaw Detection in Metals

134

Guravich, A. L., Engineer, Leningrad NII of Bridges. Ultrasonic

134

GUREVICH A.K.

25(6)  
 PHASE I BOOK EXPLOITATION SOV/2455  
 Nauchno-tekhnicheskoye obshchestvo prihorostroitel'noy promyshlennosti. Ukrainskoye respublikanskoye pravleniye  
 Novyye metody kontrolya i defektoskopii v mashinostroyeni i prihorostroyeni (Izdatel'stvo Respublikanskoy konferentsii) (New Methods of Inspection and Flaw Detection in the Machinery and Instrument Manufacturing Industries (Reports of the Conference Held at Kiev, 1956)) Kiev, Goskhozizdat USSR, 1958. 264 p. 3,700 copies printed.  
 Sponsoring Agency: Akademiya nauk USSR.  
 Ed.: A. Amelin; Tech. Ed.: P. Petralyuk; Editorial Board: Greben', B.D. Grozin, A.Z. Zhuravskiy, N. Savin (Resp. Ed.), I.D. Faynerman (Dep. Resp. Ed.), and A.A. Shishlovskiy.  
 PURPOSE: This book is intended for engineers, scientific workers, and technicians dealing with problems of inspection and flaw detection.  
 COVERAGE: This is a collection of scientific papers presented at a  
 Card 1/9

conference sponsored by the Academy of Sciences, UkrSSR, and the Nauchno-tekhnicheskoye obshchestvo prihorostroitel'noy promyshlennosti, Ukrainskoye respublikanskoye pravleniye (Ukrainian Branch, Scientific and Technical Society of the Ministry of Machine Building Industry). The papers deal with modern methods of inspection and flaw detection used in the machinery- and instrument-manufacturing industries. The subjects discussed include the use of electron microscopes in the investigation of metal surfaces; X-ray diffraction methods of radiographic isotopes; X-ray diffraction methods of metal analysis; and the use of interferometers for measuring length and thickness, and determining the coefficient of linear thermal expansion. No personalities are mentioned. References follow several of the papers.

Gurevich, A.K., Engineer, Leningrad XII of Bridges. Ultrasonic Detection of Flaws in Fillet Welds 143  
 Zhuravskiy, N.V., V.P. Yastevskiy, Engineer, and V.A. Tschal', Engineer. Kiev Electric Welding Institute. Ultrasonic Detection of Flaws in Electro-slag Welds 149  
 Trushchenko, A.A., Engineer, Kiev Electric Welding Institute. Testing Welds for Permeability 161  
 Khamatova, M.P., Doctor of Technical Sciences, Professor Leningrad XII. Interference Method of Measuring Length 173  
 Kostyukhin, M.Z., and A.A. Shishlovskiy, Kiev State University. Interference Method of Measuring Length 173  
 Volkova, Ye.A., Candidate of Technical Sciences, Leningrad XII. Interference Method of Measuring Length 180  
 Gurevich, A.K., Engineer, Leningrad XII. Interference Method of Measuring Length 180  
 Card 6/9



GUREVICH, A.K.

Apparatuses for ultrasonic defectoscopy of welded joints.  
Zav.lab. 23 no.7:858-860 '57. (MLRA 10:8)

1.Nauchno-issledovatel'skiy institut mostov.  
(Ultrasonic testing)  
(Welding--Testing)

LEVYKIN, Fedor Vasil'yevich, kand. tekhn. nauk; MATVEYEV, Aleksandr Nikolayevich, inzh.; SHTREMER, Yuriy Nikolayevich, inzh.; GUREVICH, A.K., inzh., retsenzent; ZUBLEVSKIY, S.M., inzh., red.; USENKO, L.A., tekhn. red.

[Flaw detection in locomotive parts] Defektoskopiia detalei lokomotivov. Moskva, Vses. izdatel'sko-poligr. ob"edinenie M-va putei soobshcheniia, 1962. 127 p. (MIRA 15:5)  
(Locomotives--Inspection) (Magnetic testing)  
(Ultrasonic waves--Industrial applications)

MAYZEL', Maks Mikhaylovich; KOZULIN, N.A., prof., doktor tekhn.nauk, retsenzent; GUREVICH, A.I., dotsent, kand.tekhn.nauk, retsenzent; RAKOVSKIY, M.Ye., dotsent, kand.tekhn.nauk, retsenzent; MINAYEVA, T.M., red.; PLEMYANNIKOV, M.N., red.; KNAKNIN, M.T., tekhn.red.

[Principles of automatic control of industrial processes] Osnovy avtomatizatsii tekhnologicheskikh protsessov. Moskva, Izd-vo nauchno-tekhn.lit-ry RSFSR, 1960. 877 p. (MIRA 13:9)  
(Automatic control)

GUREVICH, A.L.

High-speed automatic group scales. Trudy LTI no.50:125-139 '59.  
(MIRA 14:3)

(Scales(Weighing instruments))

L 01061-67

ACC NR: AP6015575 (N)

SOURCE CODE: UR/0146/66/009/002/0058/0063

AUTHOR: Gurevich, A. L.; Rusinov, L. A.

ORG: Leningrad Technological Institute im. Lensovet (Leningradskiy  
tekhnologicheskii institut)

42  
B

TITLE: Pulse-frequency control unit

SOURCE: IVUZ. Priborostroyeniye, v. 9, no. 2, 1966, 58-63

TOPIC TAGS: automatic control, automatic control equipment, industrial automation

ABSTRACT: Synthesizing and structures of discrete pulse-frequency serial control units are considered; the units are intended for operation in automatic control systems used in industrial processes, interpolators, serial digital integrators, etc. Pulse sequences are determined by a controlled pulse-count generator excited by clock-frequency pulses. A number of such cascade-connected generators form the "pulse-frequency control unit." Two circuits are briefly explained: (1) A circuit in which the pulse sequence is formed by a step-by-step distributor that interrogates diodes in succession; (2) A circuit which encodes the input according to a 4-digit Gray code. A recommendation for reducing the fluctuation of instantaneous frequency of output pulses is offered. Orig. art. has: 4 figures and 6 formulas.

SUB CODE: 13, 09 / SUBM DATE: 10Jan65 / ORIG REF: 008 / OTH REF: 002

Card 1/1 vlr

UDC: 62-52.523

GUREVICH, A.L.; SAUTIN, S.N.

Discrete variable-speed drive. Priborostroenie no.1:20 Ja '62.  
(MIRA 17:2)

PLEKHOV, I.M.; USTINOV, V.F.; GUREVICH, A.L.

Centralized feed of carbon dioxide and air mixtures. Lit. proizv.  
no.10:19-20 0 '63. (MIRA 16:12 )

L 10098-63

BLS

ACCESSION NR: AP3002582

S/0146/63/006/003/0045/0054

AUTHOR: Gurevich, A. L.; Rusinov, L. A.

TITLE: Variable time-interval generator <sup>49</sup><sub>48</sub>

SOURCE: IVUZ. Priborostroyeniye, v. 6, no. 3, 1963, 45-54

TOPIC TAGS: frequency divider, variable pulse-time generator

ABSTRACT: Design and operating principles are given for a variable time-interval generator designed especially for use in automated production processes. The device is a multidecade frequency divider with manually variable threshold settings on each decade, so that one output pulse is generated for a set total of input pulses. A cycle is completed when the count of the lowest-order significant figure in the set number, rather than the highest, is finished. Since the decade modules are identical, a wide range of frequency division is possible by adding decades as desired. The frequency selection,

Card 1/2



L 10098-63

ACCESSION NR: AP3002582

switching logic, and reset circuitry are described. A numerical example is given to illustrate in detail the circuit operation. A schematic as well as pictures of the decade modules are given for a two-decade generator which operates on a 50-cps input frequency and delivers output pulses at 100 possible periods between 0.2 and 20 sec. The unit is transistorized and uses ferrite switching. Advantages are design simplicity, flexibility from cascading of decades, and the fact that stability is limited only by the input generator frequency, which can be line frequency for production purposes. Orig. art. has: 7 figures.

ASSOCIATION: Kafedra avtomatizatsii khimicheskikh proizvodstv Leningradskogo tekhnologicheskogo instituta im. Lensovet (Department of Automation of Chemical Production of the Leningrad Technological Institute)

SUBMITTED: 03Jul62 DATE ACQ: 24Jul63

ENCL: 00

SUB CODE: 00

NO REF SOV: 001

OTHER: 001

Card

*gex/hk*  
2/2

L 18269-65  
ACCESSION NR: AP4048838

S/0119/64/000/011/0015/0016

AUTHOR: Gurevich, A. L.; Sokolov, M. V.; Sautin, S. N.

TITLE: Pulsed batchers of liquids-flow ratio

SOURCE: Priborostroyeniye, no. 11, 1964, 15-16

TOPIC TAGS: automatic batcher<sup>10</sup>, flow ratio batcher

ABSTRACT: An original design of a ratio batcher intended for chemical processes is briefly described. The batcher consists of a control unit pneumatically or electrically connected with two actuators. The control unit includes a synchronous-motor-driven mechanical distributor which produces pneumatic or electric pulses whose average frequency depends on the settings of rate-of-flow handwheels. The actuators receive the control pulses and perform actual batching. A functional diagram and sketch of an electromagnetic valve are supplied. Orig. art. has: 3 figures.

Card 1/2

L 18269-65

ACCESSION NR: AP4048838

ASSOCIATION: Leningradskiy tekhnologicheskii institut im. Lensqveta  
(Leningrad Technological Institute)

SUBMITTED: 00

ENCL: 00

SUB CODE: IE

NO REF SOV: 000

OTHER: 000

Card 2/2

GUREVICH, A.L., inzh.; SAUTIN, S.N., inzh.; SOKOLOV, M.V., inzh.

Pulse systems for automatic proportioning of liquids. Mekh.i  
avtom.proizv. 18 no.3:26-28 Mr '64. (MIRA 17:4)

ACC NR: AM6016006

Monograph

UR/

Obnovlenskiy, Petr Avenirovich; Korotkov, Petr Arkhipovich; Gurevich, Aleksandr L'vovich; Il'in, Boris Vladimirovich

Fundamentals of automatic control and automation in chemical industries (Osnovy avtomatiki i avtomatizatsii khimicheskikh proizvodstv) Moscow, Izd-vo "Khimiya", 1965. 607 p. illus., biblio., index. 9500 copies printed.

TOPIC TAGS: automatic control *Equipment*, automatic control technology, industrial automation, chemical plant equipment

PURPOSE AND COVERAGE: The book deals with the automation of the production processes in the chemical industry. The components of automatic control systems, checking and measuring devices, automatic regulators, and general principles of automation of chemical processes is described. Diagrams and drawings of some processes and devices are supplied. The book is intended for engineers and technicians of chemical enterprises and for students of higher technical schools specializing in this field.

TABLE OF CONTENTS:

Foreword -- 8

Introduction -- 10

Card 1/4

UDC: 62.50;62.52;66.012-52;66.012.1

ACC NR: AM6016006

Part I. Components of Automatic and Remote Control System -- 15

1. General information on components of automatic and remote control system -- 15
2. Electromechanical components -- 22
3. Ferromagnetic components -- 61
4. Electron-ion, electrothermal, photoelectric, and radioactive components -- 75
5. Electrical machinery -- 100

Part II. Automatic Control of Chemical-Technological Processes

6. General information on automatic control -- 113
7. Measuring circuits and secondary general-purpose devices -- 115
8. Temperature measuring devices -- 132
9. Pressure measuring devices -- 139
10. Flowmeters -- 150
11. Level gages -- 163
12. Devices for determining the composition and concentration of materials -- 172
13. Devices for determining physical properties of matter -- 191

Part III. Remote and Measuring Control Systems and Computers

14. Short-range remote measuring systems -- 213
15. Long-range remote measuring and control systems -- 230

Card 2/4

ACC NRAM6016000

16. Computers -- 242

Part IV. Automatic Regulation

17. Automatic regulation systems (basic information) -- 277
18. The properties of the objects of regulation -- 282
19. The properties of automatic regulators and simplest systems of automatic regulation -- 303
20. Regulator components -- 355
21. The elements of the linear theory of automatic regulation -- 384
22. Basic industrial regulators -- 437

Part V. Automation of Production Processes in Chemical Industry

23. General problems and prerequisites for automation of production processes -- 477
24. Automation of continuous operation machines and apparatus -- 489
25. Automation of periodic-operation machines and apparatus -- 526
26. Automation of production areas and workshops -- 547
27. The possibility of using computers as an example of automation of sodium production -- 576
28. Centralized control of modern chemical enterprises -- 587

Card 3/4

ACC NR: AM6016006

29. Basic problems of reliability of automatic control systems and components in chemical production -- 592

Bibliography -- 602

SUB CODE: 07,13/ SUBM DATE: 30 Nov 65/ ORIG REF: 047

Card 4/4



GUREVICH, A.M.

Discussion of the current picture and main trends in the work of the Academy of Sciences of the Uzbek S.S.R. at a joint session of the presidiums of the Academy of Sciences of the U.S.S.R. and the Academy of Sciences of the Uzbek S.S.R.  
Izv.AN Uz.SSR 3:113-119 '56. (MIRA 12:6)  
(Academy of Sciences of the Uzbek S.S.R.)

GUREVICH, A.M.; POLOZHENSKAYA, L.P.

Solid phase in the system  $\text{UO}_2(\text{NO}_3)_2 - \text{K}_2\text{CO}_3 - \text{H}_2\text{O}_2 - \text{H}_2\text{O}$ .  
Radiokhimiia 5 no.5:592-602 '63. (MIRA 17:3)

GUREVICH, A.M., dots., kand. ekon. nauk; KUSTOV, L.I., prof.,  
otv. red.

[Water ways and transportation economy; lecture in the  
course on the "Economics of water transportation" for  
students of all specialities] Vodnye puti i putevye kho-  
ziaistvo; lektsiia po kursu "Ekonomika vodnogo transporta"  
dlia studentov vsekh spetsial'nostei. Gor'kii, 1962. 21 p.  
(MIRA 17:12)

1. Gosrki. Institut inzhenerov vodnogo transporta. Kafedra  
ekonomiki i kommercheskoy ekspluatatsii.

VEDENYAPIN, G.V.; GUREVICH, A.M.

[Operation of the DT-54 tractor] Eksploataatsiia traktora DT-54.  
Moskva, Gos. izd-vo sel'khoz. lit-ry, 1953. 221 p. (MLRA 7:6)  
(Tractors)